

New Approach to Pollution Prevention

Enhances Success at Hanford



Department of Energy
Richland Operations Office



Bechtel Hanford, Inc.
Environmental Restoration Contractor

Utilizing Technologies

- Optimize characterization techniques
- Maximize segregation of waste
- Examine commercial availability

Data Quality Objectives Process

- Identify waste minimization objectives
- Evaluate waste disposal alternatives
- Determine characterization decisions and requirements

Deploy Innovative Technologies

Determine Data Quality Objectives

Pollution Prevention Opportunities

Perform Value Engineering

Partner with Regulators

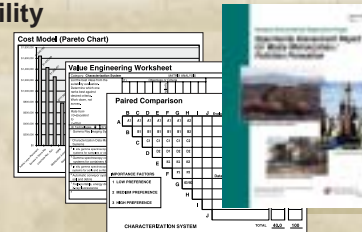
Meeting the Challenge

Waste Volumes
Reduced Over
750,000 Tons

Avoided Over
\$100 Million in
Disposal Costs

Value Engineering Screening Criteria for Waste Streams

- Assess the potential for success
- Evaluate technique availability
- Calculate the potential effective volume
- Determine the implementability
- Compare life cycle cost versus benefit



Regulator Involvement

- De-listing for reuse
- Contained in determination
- Observation approach (characterization as you go)
- Plug In approach
- Reclassification

RESULTS

Clean Soil Segregation



Deploy Innovative Technologies Partner with Regulators

Return on Investment funds were used to develop the Small Diameter Geophysical Logging System (SDGLS) in support of waste site characterization.

The SDGLS was used to map subsurface contamination in portions of the 126-F-1 ash pit. The data collected by the SDGLS demonstrated that cleanup was not required for 50% of the waste site. The development of this new characterization tool resulted in a waste reduction of 148,000 cubic meters.

Waste Sites Decreased



Partner with Regulators

The sites were reevaluated following the waste site reclassification process, as described in the Tri-Party Agreement.

The process resulted in a substantial percentage of the waste sites (348 waste sites) reclassified as not needing any further action.

Concrete Block Rubble Reused as Backfill



Determine Data Quality Objectives Partner with Regulators

Approximately 105 cubic yards of potentially contaminated concrete block rubble generated from the demolition was reused as clean backfill. The rubble was used to fill in areas where contaminated soil was excavated during cleanup.

Integration resulted in a first of its kind joint effort to reuse the demolished concrete rubble from a D&D Project as clean backfill at a remedial action post-closure restoration site.

Leachate Used as Dust Suppressant



Partner with Regulators

A de-listing petition that allowed the listed waste codes to be removed from the waste was approved by DOE-RL and the EPA.

The de-listed water is used in a sprinkler system and sprayed over the trench to control dust.

Background

Hanford is 560 square miles of sand and sagebrush, and the site of many impressive science and engineering accomplishments, past and present. As a plutonium production complex, Hanford played a critical role in the nation's defense for more than 40 years. With the Cold War now past, Hanford is the world's largest environmental cleanup project, with a host of new and complex challenges that must be solved.

Challenge

Reduce waste resulting from the execution of cleanup, stabilization, and decommissioning activities by reducing life cycle costs through the application of pollution prevention, recycling, and waste minimization practices and techniques.